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Potential-determining reaction of electrogenerated cation radicals of diphenylselenide: Dimerization versus disproportionation

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Abstract

The potential-determining reaction of cation radicals formed upon electrochemical oxidation of diphenylselenide is an orbital-controlled disproportionation both in the presence and in the absence of specially added nucleophiles (water, benzene, toluene, pyridine). The active species of ensuing bulk reactions leading to stable products was shown to be a dication of diphenylselenide which reacts with the starting molecule or with an appropriate external nucleophile.

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